

Main Criteria: Cogent Education's Interactive Cases
Secondary Criteria: New Mexico Content Standards
Subject: Science
Grades: 9, 10, 11, 12



| Title | Common Among States | New Mexico Content Standards | New Mexico Content Standards | New Mexico Content Standards | New Mexico Content Standards |
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| Action Potential - | NM | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells.</p> <p>II-C.3a. - Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).</p> <p>II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); 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| <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> |
| <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> |
| <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> |
| <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> |
| <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> |
| <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> |
| <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> |
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| | | | <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> |

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| Cellular Respiration - | NM | <p>NM.I. - Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p> <p>I-A. - Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</p> <p>I-A.2a. - Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</p> <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>NM.I. - Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p> <p>I-A. - Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</p> <p>I-A.2a. - Design and conduct scientific investigations that include: testable hypotheses; 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| | | <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. 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| <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> | <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> | <p>- Key Ideas and Details</p> | <p>NM.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> |
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| <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> | <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> | <p>NM.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> | <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> |
| <p>WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.11-12.1. - Write arguments focused on discipline-specific content. WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> | <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. NM.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> |
| <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> |
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| <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> | <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> | <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> | <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> |
| <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> | <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> | <p>NM.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> | <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> |
| <p>WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.11-12.1. - Write arguments focused on discipline-specific content. WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> | <p>NM.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> |
| <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> |
| <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> |
| <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> |
| <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> |
| <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> |
| <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> |
| <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> |
| <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> | <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> |

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| | | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> |
| Membrane Potential | NM | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.3a. - Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).</p> <p>II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.3a. - Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).</p> <p>II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; 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| <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> |
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| <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> |
| <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> |
| <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> | <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> |
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| <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> |
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| | | | | WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. | WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| Membrane Transport - NM | NM | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells.</p> <p>II-C.3a. - Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).</p> <p>II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); 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| <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> |
| <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> |
| <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> |
| <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> |
| <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> |
| <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> |
| <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> |
| | | | <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> |

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| | | | | | WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. |
| Nitrogen Cycle - | NM | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-A. - Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.</p> <p>II-A.2a. - Ecosystems: Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).</p> <p>II-A.4a. - Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>II-B. - Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.</p> <p>II-B.9a. - Geochemical Cycles: Know that Earth's system contains a fixed amount of natural resources that cycle among land, water, the atmosphere, and living things (e.g., carbon and nitrogen cycles, rock cycle, water cycle, ground water, aquifers).</p> <p>NM.III. - Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.</p> <p>III-A. - Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.</p> <p>III-A.7a. - Science and Technology: Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-A. - Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.</p> <p>II-A.2a. - Ecosystems: Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).</p> <p>II-A.4a. - Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>II-B. - Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.</p> <p>II-B.9a. - Geochemical Cycles: Know that Earth's system contains a fixed amount of natural resources that cycle among land, water, the atmosphere, and living things (e.g., carbon and nitrogen cycles, rock cycle, water cycle, ground water, aquifers).</p> <p>NM.III. - Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.</p> <p>III-A. - Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.</p> <p>III-A.7a. - Science and Technology: Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-A. - Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.</p> <p>II-A.2a. - Ecosystems: Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).</p> <p>II-A.4a. - Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>II-B. - Examine the scientific theories of the origin, structure, energy, and evolution of Earth and its atmosphere, and their interconnections.</p> <p>II-B.9a. - Geochemical Cycles: Know that Earth's system contains a fixed amount of natural resources that cycle among land, water, the atmosphere, and living things (e.g., carbon and nitrogen cycles, rock cycle, water cycle, ground water, aquifers).</p> <p>NM.III. - Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.</p> <p>III-A. - Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.</p> <p>III-A.7a. - Science and Technology: Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.</p> <p>NM.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>NM.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-A. - Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.</p> <p>II-A.2a. - Ecosystems: Describe how organisms cooperate and compete in ecosystems (e.g., producers, decomposers, herbivores, carnivores, omnivores, predator-prey, symbiosis, mutualism).</p> <p>II-A.4a. - Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; 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| <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> |
| <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> |
| <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> |
| <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> |
| <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> |
| <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> |
| <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> |
| <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> |
| <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> |
| <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> |

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| <p>Osmosis -</p> | <p>NM</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments. II-C. - Understand the characteristics, structures, and functions of cells. II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids. II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells. II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport). NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently. NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects WHST.9-10.1. - Write arguments focused on discipline-specific content. WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented. WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments. II-C. - Understand the characteristics, structures, and functions of cells. II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids. II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells. 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WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> |
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| | | <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. 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| Photosynthesis - | NM | <p>NM.1. - Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p> <p>I-A. - Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</p> <p>I-A.2a. - Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</p> | <p>NM.1. - Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p> <p>I-A. - Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</p> <p>I-A.2a. - Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</p> | <p>NM.1. - Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p> <p>I-A. - Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</p> <p>I-A.2a. - Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</p> | <p>NM.1. - Scientific Thinking and Practice: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.</p> <p>I-A. - Use accepted scientific methods to collect, analyze, and interpret data and observations and to design and conduct scientific investigations and communicate results.</p> <p>I-A.2a. - Design and conduct scientific investigations that include: testable hypotheses; controls and variables; methods to collect, analyze, and interpret data; results that address hypotheses being investigated; predictions based on results; re-evaluation of hypotheses and additional experimentation as necessary; error analysis.</p> |

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| <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-A. - Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.</p> <p>II-A.4a. - Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</p> <p>II-A.7a. - Energy Flow in the Environment: Understand and explain the principles of photosynthesis (i.e., chloroplasts in plants convert light energy, carbon dioxide, and water into chemical energy).</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells.</p> <p>II-C.3a. - Structure and Function: Describe the mechanisms for cellular processes (e.g., energy production and storage, transport of molecules, waste disposal, synthesis of new molecules).</p> <p>II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.III. - Science and Society: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.</p> <p>III-A. - Examine and analyze how scientific discoveries and their applications affect the world, and explain how societies influence scientific investigations and applications.</p> <p>III-A.7a. - Science and Technology: Describe how human activities have affected ozone in the upper atmosphere and how it affects health and the environment.</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects</p> <p>- Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-A. - Understand how the survival of species depends on biodiversity and on complex interactions, including the cycling of matter and the flow of energy.</p> <p>II-A.4a. - Ecosystems: Critically analyze how humans modify and change ecosystems (e.g., harvesting, pollution, population growth, technology).</p> <p>II-A.7a. - Energy Flow in the Environment: Understand and explain the principles of photosynthesis (i.e., chloroplasts in plants convert light energy, carbon dioxide, and water into chemical energy).</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); 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| <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>WHST.9-10.2. - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST.9-10.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. 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| | | <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> |
| Synaptic Transmission - NM | NM | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); storage of genetic material in DNA; similarities and differences between plant and animal cells; prokaryotic and eukaryotic cells.</p> <p>II-C.4a. - Structure and Function: Know how the cell membrane controls which ions and molecules enter and leave the cell based on membrane permeability and transport (i.e., osmosis, diffusion, active transport, passive transport).</p> <p>II-C.7a. - Biochemical Mechanisms: Describe how most cell functions involve chemical reactions, including: promotion or inhibition of biochemical reactions by enzymes; processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.RST.9-10. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.9-10.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.9-10.5. - Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>RST.9-10.10. - By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</p> <p>NM.WHST.9-10. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.9-10.1. - Write arguments focused on discipline-specific content.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); 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processes of respiration (e.g., energy production, ATP); communication from cell to cell by secretion of a variety of chemicals (e.g., hormones).</p> <p>NM.RST.11-12. - Reading Standards for Literacy in Science and Technical Subjects - Key Ideas and Details</p> <p>RST.11-12.1. - Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</p> <p>RST.11-12.5. - Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p>RST.11-12.9. - Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10. - By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</p> <p>NM.WHST.11-12. - Writing Standards for Literacy in Science and Technical Subjects</p> <p>WHST.11-12.1. - Write arguments focused on discipline-specific content.</p> | <p>NM.II. - The Content of Science: Life Science: Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.</p> <p>II-C. - Understand the characteristics, structures, and functions of cells.</p> <p>II-C.1a. - Structure and Function: Know that cells are made of proteins composed of combinations of amino acids.</p> <p>II-C.2a. - Structure and Function: Know that specialized structures inside cells in most organisms carry out different functions, including: parts of a cell and their functions (e.g., nucleus, chromosomes, plasma, and mitochondria); 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| <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.9-10.1(a) - Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> | <p>WHST.11-12.1 - Write arguments focused on discipline-specific content.</p> |
| <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.9-10.1(b) - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> | <p>WHST.11-12.1(a) - Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</p> |
| <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.9-10.1(c) - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> | <p>WHST.11-12.1(b) - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.</p> |
| <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.9-10.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> | <p>WHST.11-12.1(c) - Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> |
| <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.9-10.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> | <p>WHST.11-12.1(e) - Provide a concluding statement or section that follows from or supports the argument presented.</p> |
| <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.9-10.2(a) - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> | <p>WHST.11-12.2 - Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.</p> |
| <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.9-10.2(b) - Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> | <p>WHST.11-12.2(a) - Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> |
| <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.9-10.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> | <p>WHST.11-12.2(b) - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.</p> |
| <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.9-10.2(f) - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> | <p>WHST.11-12.2(c) - Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.</p> |
| <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.9-10.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> | <p>WHST.11-12.2(d) - Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</p> |
| <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.9-10.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> | <p>WHST.11-12.3 - (See note; not applicable as a separate requirement)</p> | <p>WHST.11-12.2(e) - Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).</p> |

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| | <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.9-10.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> | <p>WHST.11-12.3. - (See note; not applicable as a separate requirement)</p> <p>WHST.11-12.3(a) - Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>WHST.11-12.4. - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> |
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